



(Modified) PTO/SB/08A-B (10-96)
Approved for us through 10/31/99. OMB 0651-0031

Substitute for form 1449A-B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT COPY FROM PARENT <i>(use as many sheets as necessary)</i>		Complete if Known	
		Application Number	09/717449 <u>Unassigned</u>
		Filing Date	November 18, 2000 <u>Unassigned</u>
		First Name Inventor	Phillip A. Patterson
		Group Art Unit	Unassigned
		Examiner Name	Unassigned
		Attorney Docket Number	02-020520US 02-020522US

U.S. PATENT DOCUMENTS					
Examiner Initials	Cite No.	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY
		Number	Kind Code (if known)		
AA	6,396,548			Stemmer	08-01-2000
AB	6,117,679			Stemmer	09-12-2000
AC	6,132,970			Stemmer	10-17-2000

FOREIGN PATENT DOCUMENTS						
Examiner Initials	Cite No.	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY
		Office	Number	Kind Code (if known)		
AD	WO	98/42832			Cal Tech	10-01-1998
AE	WO	98/41653			Novo Nordisk	09-24-1998
AF	WO	99/29902			Cal Tech	06-17-1999

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS						
Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.				
AG	CARTER, "Improved Oligonucleotide-Directed Mutagenesis Using M13 Vectors," <u>Methods in Enzymology</u> , 154:382 (1987)					
AH	AH KRAMER AND FRITZ, "Oligonucleotide-Directed Construction of Mutations via Gapped Duplex DNA," <u>Methods in Enzymology</u> , 154:350-367 (1987).					
AI	AI KUNKEL, "Rapid and efficient site-specific mutagenesis without phenotypic selection," <u>PNAS</u> , 82:488-492 (Jan. 1985).					
AJ	AJ KUNKEL et al., "Rapid and Efficient Site-Specific Mutagenesis without Phenotypic Selection," <u>Methods in Enzymology</u> , 154:367-382 (1987).					
AK	AK ZOLLER AND SMITH, "Oligonucleotide-Directed Mutagenesis: A Simple Method using Two Oligonucleotide Primers and a Single-Stranded DNA Template," <u>Methods in Enzymology</u> , 154:329 (1987).					
AL	AL PRODROMOU et al., (1992) "Recursive PCR: a novel technique for total gene synthesis." <u>Protein Engineering</u> 5(8): 827-829.					
AM	AM Statutory Declaration signed by Ruth Bird as filed in pending Australian opposition case, Australian Application No. 703264.					
AN	AN Statutory Declaration signed by Ngaire Pettit-Young as filed in pending Australian opposition case, Australian Application No. 703264.					
AO	AO Statutory Declaration signed by Mae Li Gan as filed in pending Australian opposition case, Australian Application No. 703264.					

Examiner Signatur	Date Considered
-------------------	-----------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute for form 1449A-B/PTO		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT		Application Number	109747418 Unassigned
COPY FROM PARENT (use as many sheets as necessary)		Filing Date	November 18, 2000 Unassigned
		First Named Inventor	Phillip A. Patt n
		Group Art Unit	Unassigned
		Examiner Name	Unassigned
		Attorney Docket Number	02-020520US 02-020522US

AP	HIGUCHI et al., (1988) "A general method of <i>in vitro</i> preparation and specific mutagenesis of DNA fragments: study of protein and DNA interactions." <i>Nucleic Acids Research</i> 16(15): 7351-7367.
AQ	SHI et al., (1993) "Rapid PCR Construction of a Gene Containing Lym-1 Antibody Variable Regions." <i>PCR Methods and Applications</i> 3: 46-53.
AR	SHULDINER, A.R. et al., (1989) "Hybrid DNA artifact from PCR of closely related target sequences," <i>Nuc. Acids Res.</i> 17(11): 4409.
AS	SANDHU, G.S. et al., (1992) "Dual Asymmetric PCR: One-Step Construction of Synthetic Genes," <i>Biotechniques</i> 12(01): 14-16.
AT	Biotransformations, Pathogenesis, and Evolving Biotechnology, Program and Abstracts, <i>Pseudomonas '89</i> , American Society for Microbiology and The University of Illinois, July 9-13, 1989, Abstract Nos. 11-21 – 11-25, p. 26.
AU	SMITH et al. (1991) "Localized sex in bacteria," <i>Nature</i> , 349: 29-31.
AV	MICHAEL et al., (c. 1997) "Thermostable Ligase-Mediated Incorporation of Mutagenic Oligonucleotides During PCR Amplifications," <i>Methods in Molecular Biology</i> , Vol. 67, PCR Cloning Protocols: From Molecular Cloning to Genetic Engineering pp. 189-195.
AW	NER et al. (1988) "Laboratory Methods: A Simple and Efficient Procedure for Generating Random Point Mutations and for Codon Replacements Using Mixed Oligodeoxynucleotides," <i>DNA</i> 7: 127-134.
AX	MERYHANS et al., (1990) "DNA recombination during PCR," <i>Nuc. Acids Res.</i> 18(7): 1687-1691.
AY	WEBBER et al. (1983) "Formation of gene coding for hybrid proteins by recombination between related cloned genes in <i>E. coli</i> ." <i>Nuc. Acids Res.</i> 11(16): 5661-5669.
AZ	POMPON et al. (1989) "Protein engineering by cDNA recombination in yeasts, shuffling of mammalian cytochrome P-450 functions." <i>Gene</i> 83: 15-24.
BA	HORTON et al. (1990) "Gene splicing by overlap extension: Tailor-made genes using the polymerase chain reaction." <i>Biotechniques</i> 8(5): 528-535.
BB	KLUG et al. (1991) "Creating chimeric molecules by PCR directed homologous DNA recombination." <i>Nuc. Acids Res.</i> 19(10): 2793.
BC	ROUWENDAL et al., (1993) "Simultaneous Mutagenesis of Multiple Sites: Application of the Oligo Chain Reaction Using PCR Products instead of Oligonucleotides." <i>Biotechniques</i> 15(1): 68-70, 72-74, 76.

Examiner Signature	Date Considered
--------------------	-----------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



Substitute for form 1449A-B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT COPY FROM PARENT		Complete if Known	
		Application Number	087709,002 <i>Unassigned</i>
		Filing Date	December 18, 1996 <i>Unassigned</i>
		First Named Inventor	Phillip A. Patt n
		Group Art Unit	1634
		Examiner Name	Zitomer, S.
		Attorney Docket Number	02-020500US-02-020522US

U.S. PATENT DOCUMENTS						
Examiner Initials	Cite No.	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, lines, Where Relevant Passages or Relevant Figures Appeal
		Number	Kind Code (if known)			
	AA	4,766,106		Katre et al.	08-23-1988	
	AB	4,795,699		Tabor et al.	01-03-1989	
	AC	4,816,567		Cabilly et al	03-28-1989	
	AD	4,902,502		Nitecki et al.	02-20-1990	
	AE	5,264,563		Huse	11-23-1993	
	AF	5,314,809		Erlich et al.	05-24-1994	
	AG	5,512,463		Stemmer	04-30-1996	
	AH	5,514,568		Stemmer	05-07-1996	
	AI	5,514,588		Varadaraj	05-07-1996	
	AJ	5,523,388		Huse	06-04-1996	
	AK	5,541,311		Dahlberg et al.	07-30-1996	
	AL	5,547,859		Goodman et al.	08-20-1996	
	AM	5,574,205		Kucherlapati et al.	11-12-1996	
	AN	5,667,974		Birkenmeyer et al.	09-16-1997	
	AO	5,698,426		Huse	12-16-1997	
	AP	5,756,316		Schellenberger	05-26-1998	
	AQ	5,770,434		Huse	06-23-1998	
	AR	5,808,022		Huse	09-15-1998	
	AS	5,824,496		Horwitz et al.	10-20-1998	
	AT	5,830,696		Short	11-03-1998	
	AU	5,843,643		Ratner	12-01-1998	
	AV	5,858,725		Crowe	01-12-1999	
	AW	5,866,363		Pieczenic	02-02-1999	
	AX	5,871,974		Huse	02-16-1999	
	AY	5,877,402		Maliga et al.	03-02-1999	
	AZ	5,885,813		Davis et al.	03-23-1999	
	BA	5,928,905		Stemmer et al.	07-27-1999	
Examiner Signature				Date Considered		

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute for form 1449A-B/PTO		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT		Application Number	-08769,062 Unassigned
		Filing Date	December 10, 1996 Unassigned
		First Named Inventor	Phillip A. Patt n
		Group Art Unit	1634
		Examiner Name	Zitomer, S.
		Attorney Docket Number	02-020500US 02-020522US

	BB	5,955,358		Huse	09-21-1999	
	BC	5,965,415		Radman et al.	10-12-1999	
	BD	6,001,574		Short	12-14-1999	
	BE	6,004,788		Short	12-21-1999	
	BF	6,015,694		Dubenskey et al.	01-18-2000	
	BG	6,030,113		Short	02-29-2000	
	BH	6,051,049		Hansen et al.	04-18-2000	
	BI	6,054,267		Short	04-25-2000	
	BJ	6,057,103		Short	05-02-2000	
	BK	6,071,889		Weiss et al.	06-06-2000	
	BL	6,074,853		Pati et al.	06-13-2000	
	BM	6,087,177		Wohlstadter	07-11-2000	
	BN	6,093,873		Chambon et al.	07-25-2000	
	BO	6,096,548		Stemmer	08-01-2000	
	BP	6,114,115		Wagner, Jr.	09-05-2000	
	BQ	6,117,679		Stemmer	09-12-2000	
	BR	6,132,970		Stemmer	10-17-2000	
	BS	6,153,410		Arnold et al.	11-28-2000	
	BT	6,159,687		Vind	12-12-2000	
	BU	6,171,820	B1	Short	01-09-2001	
	BV	6,174,673	B1	Short et al.	01-16-2001	
	BW	6,168,919	B1	Short	01-02-2001	
	BX	6,177,263	B1	Arnold et al.	01-23-2001	
	BY	5,795,747		Henco	08-18-1998	

FOREIGN PATENT DOCUMENTS							
Examiner Initials	Cite No.	Foreign Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T
		Office	Number				
	BZ	EP	0 544 809	B1	Ixsys, Inc.	12-16-1998	
	CA	EP	0 563 296	B1	Ixsys, Inc.	03-17-1999	

Examiner Signature	Date Considered
--------------------	-----------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not consider d. Include copy of this form with next communication to applicant.

Substitute for form 1449A-B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT COPY FROM PARENT <small>(use as many sheets as necessary)</small>		Complete if Known			
		Application Number		08/769,062- <i>Unassigned</i>	
		Filing Date		December 18, 1996 <i>Unassigned</i>	
		First Named Inventor		Phillip A. Patten	
		Group Art Unit		1634	
		Examiner Name		Zitomer, S.	
		Attorney Docket Number		02-020500US 02-020522US	

	CB	EP	0 552 266	B1	The Wellcome Foundation LTD.	01-19-2000	
	CC	EP	0 397 463	A2	Berlex Laboratories	11-14-1990	
	CD	EP	0 397 463	A3	Berlex Laboratories	11-14-1990	
	CE	WO	90/14424	A1	Scripps Clinic and Research Foundation	11-29-1990	

				Publication		
	CF	WO	92/06176	A1	IXSYS, Inc	04-16-1992
	CG	WO	92/18645	A1	Henco	10-29-1992
	CH	WO	93/01282	A1	Berlex Laboratories, Inc.	01-21-1993
	CI	WO	93/18175	A1	Life Technologies, Inc.	09-16-1993
	CJ	WO	93/19172	A1	Cambridge Antibody Technology LTD.	09-30-1993
	CK	WO	94/11496	A1	IXSYS, Inc	05-26-1994
	CL	WO	97/46670	A1	Massachusetts Institute of Technology	12-11-1997
	CM	WO	99/29902	A1	California Institute of Technology	06-17-1999

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS				
Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.		
	CN	ADEY ET AL. "Preparation of second-generation phage libraries." <i>Proteins</i> 227-291. (1996)		
	CO	Berger et al. "Prospective: Expanding the Potential of Restriction Endonucleases: Use of Hapaxotermistic Enzymes." <i>Anal Biochemistry</i> 222:1-8 (1994)		
	CP	Biotransformations Amer Soc. Abstract no.11-21&11-25 Pg.26 (July 1989)		
	CQ	CARTER "Improved Oligonucleotide-Directed Mutagenesis Usinf M13 Vectors." <i>Methods of Enzymology</i> 154:382-403 (1985)		
	CR	COLLET ET AL. "A binary plasmid system for shuffling combinatorial antibody libraries." <i>Proc. Natl. Acad. Sci. USA</i> 89(21)L10026-10030 (1992)		
	CS	DANGL ET AL. "Rapid Isolation of Cloned Isotype Switch Variants Using Fluorescent Activated Cell Sorting." <i>Cytometry</i> 2(6):395-401 (1982)		
	CT	DIERICK ET AL. "Incorporation of dITP of 7-deaza dGTP during PCR improves sequencing of the product." <i>Nuc. Acid Res.</i> 21(18):4427-4428 (1993)		
Examiner Signature		Date Considered		

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

NOV 06 2003
PATENT & TRADEMARK OFFICE
JC66

(Modified) PTO/SB/08A-B (10-96)
Approved for us through 10/31/99. OMB 0651-0031

Substitute for form 1449A-B/PTO		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT		Application Number	08/769,002- <i>Unassigned</i>
COPY FROM PARENT (use as many sheets as necessary)		Filing Date	December 18, 1996 <i>Unassigned</i>
		First Named Inventor	Phillip A. Patt n
		Group Art Unit	1634
		Examiner Name	Zitomer, S.
		Attorney Docket Number	02-020500US-02-D20522US

CU	FULLEN ET AL. "Genetic Algorithms and Recursive Ensemble Mutagenesis in Protein Engineering." <i>Complex. Inrt.</i> 94, from website (1992)
CV	HEDA ET AL. "A simple in vitro site directed mutagenesis of concatamerized cDNA by inverse polymerase chain reaction." <i>Nuc. Acids Res.</i> 20(19):5241-5242 (1992)
CW	HIGUCHI ET AL "A general method of in vitro preparation and specific mutagenesis of DNA fragments study of protein and DNA interactions." <i>Nuc. Acids Res.</i> 16(15):7351-7367 (1988)
CX	HODGSON "The Whys and Wherewhore of DNA Amplification." <i>Biotechnology</i> 11(8):940-942 (1992)
CY	Kang et al. Antibody redesigned by chain shuffling from random combinatorial immunoglobulin libraries." <i>Proc. Natl. Acad. Sci. USA</i> 88(24):11120-11123 (1991)
CZ	KLUG ET AL. "Creating chimeric molecules by PCR directed homologous DNA recombination." <i>Nuc. Acids. Res.</i> 19(10):2793 (1991)
DA	KOMANO ET AL. "Distribution of Shufflon among Incl Plasmids." <i>J. Bacteriology</i> 169(11):5317-5319. (1987)
DB	KOMANO ET AL. "Physical and Genetic Analysis of Incl2 Plasmid R721: Evidence for the Presence of Shufflon." <i>Plasmid</i> 23:248-251. (1991)
DC	KRAMER & FRITZ "Oligonucleotide-Directed Construction of Mutations via Gapped Duplex DNA." <i>Methods of Enzymology</i> 154:350-367 (1978)
DD	Kunkel "Rapid and Efficient Site-Specific Mutagenesis without Phenotypic Selection." <i>Methods in Enzymology</i> 154:367-382 (1987)
DE	KUNKEL "Rapid and efficient site-specific mutagenesis without phenotype selection." <i>Proc. Natl. Acad. Sci. USA</i> 82:488-492 (1985)
DF	LOWNAM ET AL. "Affinity Maturation of Human Growth Hormone by Monavalent Phage Display." <i>J. Mol. Biol.</i> 234:654-678 (1993)
DG	MAJUMDER "Ligation-free gene synthesis by PCR: synthesis and mutagenesis at multiple loci of a chimeric gene encoding OmpA signal peptide and hirudin." <i>Gene</i> 110(1):89-94 (1992)
DH	MERYHANS ET AL. "DNA recombination during PCR." <i>Nuc. Acids. Res.</i> 18(7):1687-1691 (1990)
DI	MICHAEL "Thermostable Ligase-Mediated Incorporation of Mutagenic Oligonucleotides During PCR Amplification." <i>Meth. In Mol. Biol.</i> 67:189-195 (1997)
DJ	NER ET AL. "Laboratory Methods." <i>DNA</i> 7:127-134 (1988)
DK	OLSEN ET AL. "Hybrid Baccillus (1-3,1-4)- β -glucanases: engineering thermostable enzymes by construction of hybrid genes." <i>Mol. Gen. Genet.</i> 225(2):177-185 (1987)
DL	REIKOFSKI & TAO "Polymerase Chain Reaction (PCR) Techniques for Site-directed Mutagenesis." <i>Biotech Adv.</i> 10:535-547(1992)
DM	ROBLES ET AL."Hydropathy and Molar Volume Constraints on Combinatorial Mutants of the Photosynthetic Reaction Center." <i>J. Mol. Biol.</i> , 232:242-252 (1993)
DN	ROU'WENDAL ET AL. "Simultaneous Mutagenesis of Multiple Sites: Application of the Ligase Chain Reaction Using PCR Products Instead of Oligonucleotides." <i>Biotechniques</i> 15(1):68-70, 72-74, 76 (1993)
DO	SANDHU ET AL. "Dual Asymmetric PCR: One-Step Construction of Synthetic Genes." <i>Biotechniques</i> 12(01):14-16 (1992)

Examiner Signature		Date Considered
--------------------	--	-----------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

NOV 06 2003 JC69
U.S. PATENT & TRADEMARK OFFICE

(Modified) PTO/SB/08A-B (10-96)
Approved for use through 10/31/99. OMB 0651-0031

Substitute for form 1449A-B/PTO		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT		Application Number	08/769,062 Unassigned
COPY FROM PARENT (use as many sheets as necessary)		Filing Date	December 18, 1996 Unassigned
		First Named Inventor	Phillip A. Patten
		Group Art Unit	1634
		Examiner Name	Zitomer, S.
		Attorney Docket Number	02-020500US-02-020522US

	DP	SHI ET AL "Rapid PCR Construction of a Gene Containing Lym-1 Antibody Variable Regions." <i>PCS Meth. & Appl.</i> 3:46-52 (1993)	
	DQ	SHULDINER ET AL. "Hybrid DNA artifact from PCR of closely related target sequences." <i>Nus. Acids Res.</i> 17(11):4409 (1989)	
	DR	SMITH ET AL. "Localized sex in Bacteria." <i>Nature</i> 349:29-31 (1991)	
	DS	Statutory Declaration by Mae Li Gan No. 703264	

	DU	Statutory Declaration by Ruth Bird No. 703264	
	DV	STEMMER ET AL. "A 20-Minute Ethidium Bromide High-salt Extraction Protocol for Plasmid DNA." <i>Biotechniques</i> 10(6):726 (1991)	
	DW	STEMMER ET AL. "Enzymatic Inverse PCR- A Restriction Cite Independent, Single-Fragment Method for High-Efficiency, Site-Directed Mutagenesis." <i>Biotechniques</i> 13(2):214. (1992)	
	DX	STEMMER ET AL. (1991) R342 "Expression of Antibody By Fragments Specific for a Heavy Metal Chelate (indium EDTA) in E-Coli." <i>J. Cell Biochem</i> 217	
	DY	STEMMER ET AL. "Increased Antibody Expression for Escherichia-Coli Through Wobble-Base Library Mutagenesis by Enzymatic Inverse PCR." <i>Gene</i> 123(1):1-7. (1993)	
	DZ	WU ET AL. "Allele-specific enzymatic amplification of β -globin genomic DNA for diagnosis of sickle cell anemia." <i>Proc. Natl. Acad. Sci</i> Vol 86:2757-2760. (1999)	
	EA	ZOLLER & SMITH "Oligonucleotide-Directed Mutagenesis: A Simple Method using Two Oligonucleotide Primers and a Single-Stranded DNA Template." <i>Methods in Enzymology</i> 154:329-347 (1987)	

Examiner Signature		Date Considered	
-----------------------	--	--------------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



NOV 06 2003

(Modified) PTO/SB/08A-B (10-96)

Approved for use through 10/31/99. OMB 0651-0031

Substitute for form 1449A-B/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

COPY FROM PARENT

(use as many sheets as necessary)

Complete if Known

88769-002 | Massachusetts

Application Number	98769,002 <i>Unassigned</i>
Filing Date	December 18, 1996 <i>Unassigned</i>
First Named Inventor	Phillip A. Patten
Group Art Unit	1634
Examiner Name	Zitomer, S.
Attorney Docket Number	02-02050AUS 02-020522US

U.S. PATENT DOCUMENTS

Examiner Initials	Cite No.	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, lines, Where Relevant Passages or Relevant Figures Appel
		Number	Kind Code (if known)			
	AA	5,665,859		Wallach et al.	09-09-1997	
	AB	5,741,694		Hasrtup et al.	04-21-1998	
	AC	5,750,373		Garrard et al	05-12-1998	
	AD	5,427,930		Birkenmeyer et al.	06-27-1995	
	AE	5,792,607		Backman et al.	08-11-1998	

FOREIGN PATENT DOCUMENTS

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

Examiner Signature		Date Considered	
-----------------------	--	--------------------	--

***EXAMINER:** Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.